CLAIM AMENDMENTS

Please amend the claims (~~strikethrough~~ indicating deletion and <u>underline</u> indicating insertion) as follows:

1. (Currently amended) A magnetic elevation system comprising:

   a stator assembly having a permanent magnet assembly secured thereto, the stator assembly being substantially cylindrical in shape;

   a support assembly configured to support a metallic device that is to be magnetically elevated, the permanent magnet assembly providing a magnetic force that is exerted on said metallic device in at least a first direction;

   an electromagnetic coil assembly capable of generating a magnetic force that is exerted on said metallic device in at least a second direction; and

   a feedback control system <u>used in conjunction with a proportional-integral-derivative (PID) controller</u> configured to detect displacement of said metallic device in at least the first and second directions and to cause the magnetic force being generated by the electromagnetic coil assembly to be varied to correct displacement of said metallic device.

2. (Original) The magnetic elevation system of claim 1, wherein the system is a ring-spinning system for making yarn, said metallic device being a ring of the ring-spinning system, the ring having an eye thereon, and wherein the ring spins as it is elevated by the magnetic forces produced by the permanent magnet assembly and by the electromagnetic coil assembly, the spinning of the ring causing the ring to be displaced from a center location in at least one direction, and wherein the feedback control system causes the magnetic force generated by the electromagnet coil assembly to be varied so as to correct for the displacement while the ring is spinning.

3. (Original) The magnetic elevation system of claim 1, wherein the permanent magnet assembly generates a magnetic force that is exerted on the metallic device in a Z direction and wherein the electromagnetic coil assembly generates a magnetic force that is exerted on the metallic device in X and Y directions, the X and Y directions being transverse to each other and transverse to the Z direction.

4. (Original) The magnetic elevation system of claim 3, wherein the feedback control system includes at least two inductive displacement sensors that detect the displacement of the metallic device and generate respective output signals having values relating to amount and direction of displacement of the metallic device.

5. (Original) The magnetic elevation system of claim 1, wherein the electromagnetic coil assembly comprises two sets of electromagnetic coils, the two sets of electromagnetic coils having the stator assembly and said metallic device disposed between them.

6. (Original) The magnetic elevation system of claim 5, wherein each set of electromagnetic coils comprises four electromagnetic coils.

7. (Original) The magnetic elevation system of claim 1, further comprising a first non-magnetic annular disk disposed on said metallic device and a permanent magnet secured to the non-magnetic spacer.

8. (Original) The magnetic elevation system of claim 7, further comprising a second non-magnetic annular disk disposed on the support assembly and a permanent magnetic secured to the second non-magnetic annular disk.

9. (Original) The magnetic elevation system of claim 8, further comprising a non-magnetic spacer disposed on said metallic device.

10. (Original) The magnetic elevation system of claim 9, further comprising a non-magnetic spacer disposed on the stator assembly adjacent the non-magnetic spacer disposed on said metallic device.

11. (Original) The magnetic elevation system of claim 5, further comprising first and second flux plates having the stator assembly, said metallic device, the support assembly and the electromagnetic coil assembly disposed between them.

12. (Original) The magnetic elevation system of claim 11, further comprising third and fourth flux plates having the first and second flux plates, the stator assembly, said metallic device, the support assembly and the electromagnetic coil assembly disposed between them.

13. (Withdrawn) A method for magnetically elevating a metallic device, the method comprising:

providing a stator assembly having a permanent magnet assembly secured thereto, the stator assembly being substantially cylindrical in shape;

supporting a metallic device that is to be magnetically elevated on a support assembly, the permanent magnet assembly providing a magnetic force that is exerted on said metallic device in at least a first direction; and

generating a magnetic force with an electromagnetic coil assembly that is exerted on said metallic device in at least a second direction; and

with a feedback control system, detecting displacement of said metallic device in at least the first and second directions and causing the magnetic force being generated by the electromagnetic coil assembly to be varied to correct displacement of said metallic device.

14. (Withdrawn) The method of claim 13, wherein the method is a method of making yarn in a ring-spinning system, said metallic device being a ring of the ring-spinning system, the ring having an eye thereon, and wherein the ring spins as it is elevated by the magnetic forces produced by the permanent magnet assembly and by the electromagnetic coil assembly, the spinning of the ring causing the ring to be displaced from a center location in at least one direction, and wherein the feedback control system causes the magnetic force generated by the electromagnet coil assembly to be varied so as to correct for the displacement while the ring is spinning.

15. (Withdrawn) The method of claim 13, wherein the permanent magnet assembly generates a magnetic force that is exerted on the metallic device in a Z direction and wherein the electromagnetic coil assembly generates a magnetic force that is exerted on the metallic device in X and Y directions, the X and Y directions being transverse to each other and transverse to the Z direction.

16. (Withdrawn) The method of claim 15, wherein the feedback control system includes at least two inductive displacement sensors that detect the displacement of the metallic device and generate respective output signals having values relating to amount and direction of displacement of the metallic device.

17. (Withdrawn) The method of claim 13, wherein the electromagnetic coil assembly comprises two sets of electromagnetic coils, the two sets of electromagnetic coils having the stator assembly and said metallic device disposed between them.

18. (Withdrawn) The method of claim 13, wherein each set of electromagnetic coils comprises four electromagnetic coils.

19. (Withdrawn) A computer program for controlling a direction and magnitude of a magnetic force being exerted on a metallic device being magnetically elevated, the program being embodied on a computer-readable medium, the program comprising:

a first code segment that processes output signals from at least one displacement sensor relating to an amount of displacement of said metallic device in at least a first direction, the first code segment determining the amount of displacement from the signals output from said at least one displacement sensor, and

a second code segment that generates control signals based on the amount of displacement determined by the first code segment, the control signals generated by the second code segment varying the direction and magnitude of the force being exerted on the metallic device to correct for the displacement of said metallic device.

20. (Withdrawn) The computer program of claim 19, wherein the computer program is implemented in a ring-spinning system for making yarn, the metallic device being a ring of the ring spinning system.